

Application No.: 10/669,577
Docket No.: UC0223USNA

Remarks

Status of the Application

Claims 1-22 and 44-53 are pending in the application.

Claims 23-43, drawn to unelected subject matter following a restriction requirement, are being canceled, therefore, the text of those claims is being deleted and the status identifier is changed to "canceled". Previously, the claims were withdrawn, and were presented in full text with the status identifier "withdrawn" preceding each one. Since claims 23-43 were subject to election/restriction, those claims are being canceled without prejudice to refiling those claims, or embodiments presented therein, in a later continuing application such as a divisional application.

Applicants acknowledge the Examiner's withdrawal of the statutory double patenting rejection and the rejections over McCormick et al., U.S. Patent 6,611,096, and Gardener et al., U.S. Patent 5,716,550.

Claims 1-5, 10-14, 17-19, 46 and 51-53 stand rejected under 35 U.S.C. § 102(e) as anticipated by Hsu, U.S. Patent 6,756,474. Claims 1-18, 23, 44-46 and 51-53 stand rejected under 35 U.S.C. § 103(a) as unpatentable over McCormick et al., U.S. Patent 6,611,096. Claims 1-5 stand provisionally rejected under the doctrine of nonstatutory obviousness-type double patenting over Claims 12 and 17 of U.S. Patent 6,756,474. Claims 1-22 and 44-53 are provisionally rejected under the same doctrine over claims 1, 5, 7-10, 14-15 and 17-18 of copending Application No. 10/814,917. Claims 1-22 and 44-53 are provisionally rejected under the same doctrine over claims 1-10 and 20-21 of copending Application No. 10/803,113.

None of the claims is being amended.

Each rejection will be addressed separately below.

Claims 1-5, 10-14, 17-19, 46 and 51-53 Not Anticipated by Hsu, U.S. Patent No. 6,756,474

Applicants respectfully traverse the rejection of these claims as allegedly anticipated by Hsu.

Hsu relates to an aqueous dispersion of polyaniline complexed with a high molecular weight polymeric sulfonic acid. Although the product polyaniline complex is made as a dispersion, there is no teaching or suggestion that the starting acid is or could be a *colloid-forming* polymeric acid. In fact, the reference teaches that the polymeric acids are soluble in

Application No.: 10/669,577
Docket No.: UC0223USNA

aqueous solution. In claim 1 of Hsu, aniline monomers of formula I and the high molecular weight polymer of formula II are combined to form *an aqueous solution*. Examples 1 and 2 of Hsu also teach the use of aqueous solutions of the polymeric acid used to form the polyaniline complex. (See Example 2, Col. 8, lines 28-29: "3.9 g distilled aniline was first dissolved in a 144 ml aqueous solution containing 6.9 g of HMW-PSSA Sample 1-1." See also Col. 8, lines 33-37 and Col. 9, lines 11-14 [the dried solid PANI/HMW-PSSA complex added to distilled water with stirring formed a 1.0 or 2.0 wt % dispersion]. Also, Comparative Example A, Col. 9, lines 27-28 referring to the "aniline/L-PSSA solution" in water.) As Hsu does not teach or suggest the aqueous dispersion of Applicants' Claim 1 comprising a polyaniline and at least one colloid-forming polymeric acid, similarly Hsu does not teach or suggest the buffer layer of Applicants' Claim 11, the TFT of Applicants' Claim 19, the OLED of Applicants' Claim 46, the device of Applicants' Claim 51, or any of the claims dependent thereon.

There are a number of limitations in the present claims, in addition to those cited immediately above, that are not taught or disclosed in the reference. These include: "at least one colloid-forming polymeric acid" (Claim 1) which is defined in the specification at page 6, lines 4-5 as, "insoluble in water, and form colloids when dispersed into an aqueous medium." Claims 6 and 7, for example, address fluorinated and perfluorinated colloid-forming polymeric acids (see also Claims 15, 16 and 22). Accordingly, Hsu does not teach or suggest each and every limitation of the claims under review, and therefore cannot anticipate the rejected claims. Applicants respectfully assert that this rejection should be withdrawn.

Claims 1-18, 44-46 and 51-53 Are Patentable Over McCormick, U.S. Patent No. 6,611,096

Applicants respectfully traverse the rejection of these claims as allegedly unpatentable over McCormick.

McCormick relates to a self-doped, water-soluble buffer layer comprising an inherently conducting polymer and a self-doping moiety covalently bound to the polymer. Col. 2, line 66 to Col. 3, line 6 and Col. 3, lines 49-53. "Self-doped" means that the doping moiety is covalently bonded to the polymer being doped (Col. 4, lines 15-16) and Formula III (50% self-doped), Formula IV (100% self-doped), and Formula V (self-dopant moiety covalently substituted at sites other than the aromatic rings). The self-doped buffers of McCormick are water-soluble: see

Application No.: 10/669,577
Docket No.: UC0223USNA

Col. 7, lines 57-60; Col. 8, lines 29, and 63-64; Col. 9, lines 20-27; and Col. 10, line 50 (Example 1).

The claims of the application recite an aqueous dispersion of a polyaniline (conductive polymer) and at least one colloid-forming polymeric acid (claim 1) and all of the other independent claims contain these limitations. The composition is therefore not a solution, as in McCormick, but a dispersion, which is a continuous liquid medium containing a suspension of minute particles (please see the application at page 3, lines 30-32, and related text at page 3, line 29 to page 4, line 2). In addition, the colloid-forming polymeric acids are a discrete component of the aqueous dispersions claimed. The conductive polymer is not self-doped as in McCormick, but is "externally doped" as that term is employed in McCormick (Col. 4, lines 9-15).

The Office Action states that McCormick discloses compositions comprising colloid-forming polymeric acids. Applicants respectfully disagree. The acid groups listed in column 7, lines 14-21 of McCormick are acid substituent groups which McCormick states may be covalently bonded to the aniline. These are not polymeric acids. In fact, the only polymers other than polyaniline disclosed by McCormick are polymers suitable for blending with the self-doped polyaniline. Of the polymers listed (see col. 6, lines 14-20), the only acid polymer is poly(acrylic acid), which is water soluble. A Material Safety Data Sheet ("MSDS") for polyacrylic acid is attached as a reference. Further, the polymers listed in the U.S. Patent 5,642,859, incorporated by reference in McCormick, are also water soluble (see col 5, lines 20-21 of the '859 patent). Applicants can find no teaching or suggestion of a colloid-forming polymeric acid in McCormick, nor any teaching or suggestion of Applicants' claimed invention as recited in independent Claims 1, 11, 19, 44, 46, 51, and the claims dependent thereon, and no motivation from McCormick to alter the disclosed buffer composition by making it externally doped and in the form of a dispersion rather than a solution.

Applicants respectfully request that this rejection be withdrawn.

Clarification Requested

The Office Action appears to reject claim 23 although that claim was previously withdrawn from consideration and is now canceled (please see paragraph 8, page 4 of the Action). Applicants assume this to be merely a typographical error. Clarification is respectfully requested.

Application No.: 10/669,577
Docket No.: UC0223USNA

Nonstatutory Double Patenting

[1] Claims 1-5 stand as rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12 and 17 of U.S. Patent No. 6,756,474 ("Hsu"). Applicants respectfully traverse this rejection.

Claim 12 of Hsu is directed to a composition comprising polyaniline complexed with a high molecular weight polymeric sulfonic acid, where the polymeric backbone is selected from a specific group. However, as discussed above, these are not colloid-forming polymeric acids. Applicants submit that Applicants' Claims 1-5 are not obvious in view of the water-soluble acids cited in Hsu.

With respect to Claim 7 of Hsu, Applicants assume this reference to be a typographical error, as the claim refers to a process. Clarification is respectfully requested. Applicants assume this to refer to Claim 17, dependent upon Claim 12. Applicants respectfully apply the same remarks to a rejection based on Claim 17 as those applied above to the rejection based on Claim 12.

[2] Claims 1-22 and 44-53 stand as provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 7-10, 14-15 and 17-18 of copending Application No. 10/814, 917.

A terminal disclaimer is submitted concurrently herewith. Applicants respectfully submit that this rejection has been overcome and request that it be withdrawn.

[3] Claims 1-22 and 4-53 stand as provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 and 20-21 of copending Application No. 10/803, 113. For the purposes of this response, Applicants will assume that "4-53" is a typographical error and was intended to read "44-53".

A terminal disclaimer is submitted concurrently herewith. Applicants respectfully submit that this rejection has been overcome and request that it be withdrawn.

Conclusion

In light of the foregoing remarks, Applicants respectfully submit that the rejections of claims 1-22 and 44-53 have been overcome and should be withdrawn, leaving those claims in

Application No.: 10/669,577
Docket No.: UC0223USNA

condition for allowance. A notice of allowance for claims 1-22 and 44-53 is therefore earnestly solicited.

Should the Examiner have questions about the contents of this paper or the status of the claims, the Examiner is invited to call the undersigned at the telephone number listed below.

Respectfully submitted,



John H. Lamming
Attorney for Applicants
Registration No.: 34,857
Telephone: (302) 992-5877
Facsimile: (302) 892-1026

Dated: October 18, 2007

OCT. 18. 2007 4:42PM

DUPONT BMP 25

OCT 18 2007

NO. 6124 P. 11

MATERIAL SAFETY DATA SHEET

Waters

THE SCIENCE OF WHAT'S POSSIBLE™

Waters Corporation
34 Maple Street
Milford, MA 01757
508-478-2000

FOR CHEMICAL EMERGENCY
24 Hours per Day 7 Days per Week
Call CHEMTREC 800-424-9300
Outside N. America 703-527-3887 (collect)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION:

Product Name: Polyacrylic Acid Kit, WAT035714
Date of Prep: June 13, 1997

MSDS #: WAT037824
Revision: 2, June 28, 2007

2. COMPOSITION/INFORMATION ON INGREDIENTS:

CHEMICAL INGREDIENT NAME				EXPOSURE LIMITS		EU LABEL
	CAS NUMBER	EC NUMBER	% BY WT.	OSHA	ACGIH	HAZARD SYMBOL
Polyacrylic acid	9003-01-4	NE	100	5 mg/m3 as PNOR	NE	NE

Notes: Polyacrylic acids in a range of molecular weights.
PNOR = Particulates Not Otherwise Regulated.

Exposure Limits are 8-Hour TWA (Time Weighted Average) unless designated C (Ceiling) or STEL (Short Term Exposure Limit).

3. HAZARDS IDENTIFICATION: White crystalline powder. Irritating to eyes, respiratory system and skin. The small amounts supplied in our products are unlikely to cause severe or immediate health effects. Use only as directed and in accordance with good laboratory practices.

4. FIRST AID MEASURES:

Inhalation: Remove to fresh air.
Skin Contact: Flush with water.
Eye Contact: Immediately flush with water for a minimum of 15 minutes.
Ingestion: Get medical attention.

After following first aid measures, seek medical attention.

5. FIRE-FIGHTING MEASURES:

Flammable Properties: Combustible solid.
Extinguishing Media: Dry chemical, carbon dioxide or appropriate foam.
Unique Aspects Contributing To a Fire: None.
Special Fire Fighting Procedures: None.
Note: As in any fire, wear self-contained breathing apparatus, and full protective gear.

6. ACCIDENTAL RELEASE MEASURES: Due to small quantities involved, spills should not pose a significant problem. Sweep up material and place in container for proper waste disposal. Avoid raising dust.

7. HANDLING AND STORAGE: Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash after handling. Avoid raising dust. Handle in accordance with good laboratory practices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

Handle in accordance with good laboratory practices.

Respiratory Protection: Not normally needed. If exposure limits are exceeded, use approved particulate respirator.
Eye Protection: Safety glasses with side shields.
Skin Protection: Neoprene or other chemical resistant gloves. Disposable nitrile are acceptable for light intermittent exposure.
Engineering Controls: Work in a fume hood or use general or other local exhaust ventilation to meet Exposure Limits.

OCT. 18. 2007 4:43PM DUPONT BMP 25

OCT 18 2007

NO. 6124 P. 12

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: White crystalline powder

Physical State: Solid

Odor: None

pH: NA

Specific Gravity: 1.41

Flash Point: NE

Explosion Limits: NE

Boiling Point: NE

Melting Point: 222°F

Vapor Pressure: NE

Vapor Density (air=1): NE

Solubility in Water: Soluble

Other: NA

10. STABILITY AND REACTIVITY:

Hazardous Polymerization

☒ Will Not Occur

☐ May Occur

Stability: Stable

Hazardous Decomposition/Combustion Products:

Carbon monoxide, Carbon dioxide, Acid, irritating smoke.

Conditions & Materials to Avoid:

Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION:

Primary Route(s) of Exposure Under Normal Use: Inhalation

Target Organ(s): NE

Acute Effects: Irritating to the eyes, mucous membranes, upper respiratory tract and skin.

Orl-rat LD50:2500 mg/kg; orl-mus LD50:4600 mg/kg; ipr-mus LD50:39 mg/kg.

Chronic Effects: NE

Other Information: Chemical Ingredient(s) not classified as carcinogen(s) by OSHA, IARC, NTP, ACGIH, or California.

12. ECOLOGICAL INFORMATION: NE

13. DISPOSAL CONSIDERATIONS: Waste is not classified as a hazardous waste according to U.S. Environmental Protection Agency (EPA). To determine proper disposal, consult applicable federal, state and local regulations.

14. TRANSPORT INFORMATION: Non Hazardous for Transport. Not Regulated.

U.S. DOT: Shipping Name: NE

Hazard Class: NE

UN/NA #: NE

Packing Group #: NE

IATA/ICAO: NE

15. REGULATORY INFORMATION:

EU Risk/Safety Phrases: NE

U.S. TOSCA: Listed

Canada: This product has been classified according to the hazard criteria of the CPR and this MSDS contains all the information required by the CPR.

16. OTHER INFORMATION:

U.S. EPA

SARA 313 Chemicals
NE

CERCLA RC
NE

National Fire Protection Association Rating

4= Severe Hazard

3= Serious Hazard

2= Moderate Hazard

1= Slight Hazard

0= Minimal Hazard

HEALTH

FLAMMABILITY

REACTIVITY

OTHER

NE

1

0

Notes: Not Established (NE) means a value has not been set or there is no information available. Not Applicable (NA) means that the topic is not pertinent.

The information contained herein has been compiled from data presented in various technical sources believed to be accurate. Waters makes no warranties and assumes no liability in connection with the use of this information. It is the user's responsibility to determine the suitability of this information and to assure the adoption of necessary precautions.

WAT037824